BAKER BOTTS LLP

Please type a plus sign (+) inside this box →

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	09/529,239
Filing Date	10-27-00
First Named Inventor	Marie-Pascale Doutriaux
Group Art Unit	1638
Examiner Name	David H. Kruse
Total Number of Pages in This Submission	
Attorney Docket Number	A33153-PCT-USA

ENCLOSURES *(check all that apply)*

- ☑ Fee Transmittal Form
- ☑ Fee Attached
- ☑ Amendment / Reply
- ☐ After Final
- ☐ Affidavits/declaration(s)
- ☑ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
- ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Assignment Papers *(for an Application)*
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
- ☐ After Allowance Communication to Group
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
- ☐ *Proprietary Information*
- ☐ Status Letter
- ☑ Other Enclosure(s) *(please identify below)*:

Third Substitute Sequence Listing

Remarks ☑

Response to Notice To Comply

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm *or* Individual name	BakerBotts LLP 30 Rockefeller Plaza New York, NY 10112
Signature	Alicia A. Russo — Att Name: Alicia A. Russo; PTO Reg: 46,192
Date	1-10-03

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231 on this date: 1-10-03

Typed or printed name	Alicia A. Russo		
Signature	Alicia A. Russo	Date	1-10-03

BAKER BOTTS LLP

Attorney Docket Number: A33153-PCT-USA

Title: METHODS FOR OBTAINING PLANT VARIETIES

Use Space Below for Additional Information:

BAKER BOTTS L.L.P.

FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 110

Complete if Known	
Application Number	09/529,239
Filing Date	10-27-00
First Named Inventor	Marie-Pascale Doutriaux
Examiner Name	David H. Kruse
Art Unit	1638
Attorney Docket No.	A33153-PCT-USA

METHOD OF PAYMENT *(check all that apply)*

☑ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☑ Deposit Account:

Deposit Account Number: 02-4377

Deposit Account Name: Baker Botts LLP

The Commissioner is authorized to: *(check all that apply)*

☐ Charge fee(s) indicated below ☑ Credit any overpayments

☑ Charge any additional fee required under 37CFR 1.16 and 1.17

☐ Charge fee(s) indicated below, **except for the filing fee** to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	750	2001	375	Utility filing fee	
1002	330	2002	165	Design filing fee	
1003	520	2003	260	Plant filing fee	
1004	750	2004	375	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($) 0

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims		Fee from below	Fee Paid
Total Claims	- 20 =	0	X		= 0
Independent Claims	- 3 =	0	X		= 0
Multiple Dependent					=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	84	2201	42	Independent claims in excess of 3
1203	280	2203	140	Multiple dependent claim, if not paid
1204	84	2204	42	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0

***or number previously paid, if greater; For Reissues, see above*

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	110
1252	410	2252	205	Extension for reply within second month	
1253	930	2253	465	Extension for reply within third month	
1254	1,450	2254	725	Extension for reply within fourth month	
1255	1,970	2255	985	Extension for reply within fifth month	
1401	320	2401	160	Notice of Appeal	
1402	320	2402	160	Filing a brief in support of an appeal	
1403	280	2403	140	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,300	2453	650	Petition to revive - unintentional	
1501	1,300	2501	650	Utility issue fee (or reissue)	
1502	470	2502	235	Design issue fee	
1503	630	2503	315	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	750	2809	375	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	750	2810	375	For each additional invention to be examined (37 CFR 1.129(b))	
1801	750	2801	375	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 110

SUBMITTED BY (Complete *(if applicable)*)

Name *(Print/Type)*	Alicia A. Russo	Registration No. *(Attorney/Agent)*	46,192	Telephone	212-408-2627
Signature	Alicia A. Russo			Date	1-10-03

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,239	10/27/2000	Marie-Pascale Doutriaux	A33153-PCT USA	1839

21003 7590 11/13/2002

BAKER & BOTTS
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER
KRUSE, DAVID H

ART UNIT	PAPER NUMBER
1638	

DATE MAILED: 11/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant's Copy

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, DC 20231
www.uspto.gov

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.

EXAMINER	
ART UNIT	PAPER
	22

DATE MAILED:

Pleas find below and/or attached an Office communication concerning this application or pr c ding.

Commissioner of Patents

The communication filed 26 September 2002 is not fully responsive to the Office communication mailed 21 May 2002 for the reason(s) set forth on the attached Notice To Comply With The Sequence Rules or CRF Diskette Problem Report. Applicant must comply with the requirements of the sequence rules (37 CFR 1.821 - 1.825) before the application can be examined under 35 U.S.C. §§ 131 and 132.

Since the reply appears to be bona fide attempt to comply with the requirements of the sequence rules (37 CFR 1.821 - 1.825), applicant is given a TIME PERIOD of **ONE (1) MONTH** from the mailing date of this communication within which to correct the deficiency so as to comply with the sequence rules (37 CFR 1.821 - 1.825) in order to avoid abandonment of the application under 37 CFR 1.821(g). EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136(a).

Any inquiry concerning this communication should be directed to Examiner David Kruse, Ph.D., Art Unit 1638, whose telephone number is (703) 306-4539.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (703) 308-0196.

Amy Nelson

David Kruse Art Unit 1638
6 November 2002

AMY J. NELSON, PH.D
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

Notice to Comply	Application No. 09/529,239	Applicant(s) DOUTRIAUX ET AL.	
	Examiner David H Kruse	Art Unit 1638	

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

Applicant must file the items indicated below within the time period set the Office action to which the Notice is attached to avoid abandonment under 35 U.S.C. § 133 (extensions of time may be obtained under the provisions of 37 CFR 1.136(a)).

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

☒ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to the final rulemaking notice published at 55 FR 18230 (May 1, 1990), and 1114 OG 29 (May 15, 1990). If the effective filing date is on or after July 1, 1998, see the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998).

☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).

☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).

☒ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."

☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).

☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable from of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).

☐ 7. Other:

Applicant Must Provide:

☒ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".

☒ An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.

☒ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216
For CRF Submission Help, call (703) 308-4212
PatentIn Software Program Support
Technical Assistance.....703-287-0200
To Purchase PatentIn Software.....703-306-2600

PLEASE RETURN A COPY OF THIS NOTICE WITH YOUR REPLY

2

BIOTECHNOLOGY SYSTEMS BRANCH

1638
#21
RP
11-5-02

RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/529,239B
Source: 1600
Date Processed by STIC: 10/3/2002

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.
PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

1) **INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,**
2) **TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY**

FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.
PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)
PATENTIN 3.0 e-mail help: patin3help@uspto.gov or phone 703-306-4119 (R. Wax)

TO **REDUCE** ERRORED SEQUENCE LISTINGS, **PLEASE** USE THE **CHECKER VERSION 3.1 PROGRAM**, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:
http://www.uspto.gov/web/offices/pac/checker

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.
Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.
Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<**http://www.uspto.gov/ebc/efs/downloads/documents.htm**>, **EFS Submission User Manual** - ePAVE)
2. **U.S. Postal Service:** U.S. Patent and Trademark Office, Box Sequence, P.O. Box 2327, Arlington, VA 22202
3. **Hand Carry directly to:**
   U.S. Patent and Trademark Office, Technology Center 1600, Reception Area, 7th Floor, Examiner Name, Sequence Information, Crystal Mall One, 1911 South Clark Street, Arlington, VA 22202
   Or
   U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202
4. **Federal Express, United Parcel Service, or other delivery service to:** U.S. Patent and Trademark Office, Box Sequence, Room 1B03-Mailroom, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202

Revised 01/29/2002

1600

RAW SEQUENCE LISTING DATE: 10/21/2002
PATENT APPLICATION: US/09/529,239B TIME: 18:20:24

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Output Set: N:\CRF4\10212002\I529239B.raw

Does Not Comply
Corrected Diskette Needed
pp 1-2, 5-7

1 <110> APPLICANT: Doutriaux, Marie-Pascale
2 Betzner, Andreas
3 Freyssinet, Georges
4 Perez, Pascal
5 <120> TITLE OF INVENTION: METHOD FOR OBTAINING PLANT VARIETIES
6 <130> FILE REFERENCE: A33153-PCT-USA 072667.0128
7 **<140> CURRENT APPLICATION NUMBER: US/09/529,239B**
8 <141> CURRENT FILING DATE: 2000-10-27
9 <150> PRIOR APPLICATION NUMBER: PCT/EP98/06977
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11 <160> NUMBER OF SEQ ID NOS: 103

ERRORED SEQUENCES

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RAW SEQUENCE LISTING DATE: 10/21/2002
PATENT APPLICATION: US/09/529,239B TIME: 18:20:24

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Output Set: N:\CRF4\10212002\I529239B.raw

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RAW SEQUENCE LISTING DATE: 10/21/2002
PATENT APPLICATION: US/09/529,239B TIME: 18:20:24

Input Set : N:\Crf4\Refhold\I529239B.raw
Output Set: N:\CRF4\10212002\I529239B.raw

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538  385                 390                 395                 400
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RAW SEQUENCE LISTING DATE: 10/21/2002
PATENT APPLICATION: US/09/529,239B TIME: 18:20:24

Input Set : N:\Crf4\Refhold\I529239B.raw
Output Set: N:\CRF4\10212002\I529239B.raw

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                    405                 410                 415
Asn Thr Glu Met Thr Leu Ser Ala Asn Thr Leu Gln Gln Leu Glu Val
                420                 425                 430
Val Lys Asn Asn Ser Asp Gly Ser Glu Ser Gly Ser Leu Phe His Asn
            435                 440                 445
Met Asn His Thr Leu Thr Val Tyr Gly Ser Arg Leu Leu Arg His Trp
        450                 455                 460
Val Thr His Pro Leu Cys Asp Arg Asn Leu Ile Ser Ala Arg Leu Asp
465                 470                 475                 480
Ala Val Ser Glu Ile Ser Ala Cys Met Gly Ser His Ser Ser Ser Gln
                485                 490                 495
Leu Ser Ser Glu Leu Val Glu Glu Gly Ser Glu Arg Ala Ile Val Ser
            500                 505                 510
Pro Glu Phe Tyr Leu Val Leu Ser Ser Val Leu Thr Ala Met Ser Arg
        515                 520                 525
Ser Ser Asp Ile Gln Arg Gly Ile Thr Arg Ile Phe His Arg Thr Ala
    530                 535                 540
Lys Ala Thr Glu Phe Ile Ala Val Met Glu Ala Ile Leu Leu Ala Gly
545                 550                 555                 560
Lys Gln Ile Gln Arg Leu Gly Ile Lys Gln Asp Ser Glu Met Arg Ser
                565                 570                 575
Met Gln Ser Ala Thr Val Arg Ser Thr Leu Leu Arg Lys Leu Ile Ser
            580                 585                 590
Val Ile Ser Ser Pro Val Val Val Asp Asn Ala Gly Lys Leu Leu Ser
        595                 600                 605
Ala Leu Asn Lys Glu Ala Ala Val Arg Gly Asp Leu Leu Asp Ile Leu
    610                 615                 620
Ile Thr Ser Ser Asp Gln Phe Pro Glu Leu Ala Glu Ala Arg Gln Ala
625                 630                 635                 640
Val Leu Val Ile Arg Glu Lys Leu Asp Ser Ser Ile Ala Ser Phe Arg
                645                 650                 655
Lys Lys Leu Ala Ile Arg Asn Leu Glu Phe Leu Gln Val Ser Gly Ile
            660                 665                 670
Thr His Leu Ile Glu Leu Pro Val Asp Ser Lys Val Pro His Asn Trp
        675                 680                 685
Val Lys Val Asn Ser Thr Lys Lys Thr Ile Arg Tyr His Pro Pro Glu
    690                 695                 700
Ile Val Ala Gly Leu Asp Glu Leu Ala Leu Ala Thr Glu His Leu Ala
705                 710                 715                 720
Ile Val Asn Arg Ala Ser Trp Asp Ser Phe Leu Lys Ser Phe Ser Arg
                725                 730                 735
Tyr Tyr Thr Asp Phe Lys Ala Ala Val Gln Ala Leu Ala Ala Leu Asp
            740                 745                 750
Cys Leu His Ser Leu Ser Thr Leu Ser Arg Asn Lys Asn Tyr Val Arg
        755                 760                 765
Pro Glu Phe Val Asp Asp Cys Glu Pro Val Glu Ile Asn Ile Gln Ser
    770                 775                 780
Gly Arg His Pro Val Leu Glu Thr Ile Leu Gln Asp Asn Phe Val Pro
785                 790                 795                 800
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RAW SEQUENCE LISTING DATE: 10/21/2002
PATENT APPLICATION: US/09/529,239B TIME: 18:20:24

Input Set : N:\Crf4\Refhold\I529239B.raw
Output Set: N:\CRF4\10212002\I529239B.raw

```
589       Asn Asp Thr Ile Leu His Ala Glu Gly Glu Tyr Cys Gln Ile Ile Thr
590                       805                 810                 815
591       Gly Pro Asn Met Gly Gly Lys Ser Cys Tyr Ile Arg Gln Val Ala Leu
592                   820                 825                 830
593       Ile Ser Ile Met Ala Gln Val Gly Ser Phe Val Pro Ala Ser Phe Ala
594               835                 840                 845
595       Lys Leu His Val Leu Asp Gly Val Phe Thr Arg Met Gly Ala Ser Asp
596           850                 855                 860
597       Ser Ile Gln His Gly Arg Ser Thr Phe Leu Glu Glu Leu Ser Glu Ala
598       865                 870                 875                 880
599       Ser His Ile Ile Arg Thr Cys Ser Ser Arg Ser Leu Val Ile Leu Asp
600                       885                 890                 895
601       Glu Leu Gly Arg Gly Thr Ser Thr His Asp Gly Val Ala Ile Ala Tyr
602                   900                 905                 910
603       Ala Thr Leu Gln His Leu Leu Ala Glu Lys Arg Cys Leu Val Leu Phe
604               915                 920                 925
605       Val Thr His Tyr Pro Glu Ile Ala Glu Ile Ser Asn Gly Phe Pro Gly
606           930                 935                 940
607       Ser Val Gly Thr Tyr His Val Ser Tyr Leu Thr Leu Gln Lys Asp Lys
608       945                 950                 955                 960
609       Gly Ser Tyr Asp His Asp Asp Val Thr Tyr Leu Tyr Lys Leu Val Arg
610                       965                 970                 975
611       Gly Leu Cys Ser Arg Ser Phe Gly Phe Lys Val Ala Gln Leu Ala Gln
612                   980                 985                 990
613       Ile Pro Pro Ser Cys Ile Arg Arg Ala Ile Ser Met Ala Ala Lys Leu
614               995                1000                1005
615       Glu Ala Glu Val Arg Ala Arg Glu Arg Asn Thr Arg Met Gly Glu Pro
616          1010                1015                1020
617       Glu Gly His Glu Glu Pro Arg Gly Ala Glu Glu Ser Ile Ser Ala Leu
618       1025                1030                1035                1040
619       Gly Asp Leu Phe Ala Asp Leu Lys Phe Ala Leu Ser Glu Glu Asp Pro
620                       1045                1050                1055
621       Trp Lys Ala Phe Glu Phe Leu Lys His Ala Trp Lys Ile Ala Gly Lys
622                   1060                1065                1070
623       Ile Arg Leu Lys Pro Thr Cys Ser Phe
624               1075                1080
685 <210> SEQ ID NO: 26
686 <211> LENGTH: 2188
687 <212> TYPE: DNA
688 <213> ORGANISM: Arabidopsis thaliana ecotype Columbia
689 <223> OTHER INFORMATION: Clone 43
E--> 690 <400> SEQUENCE: 26
691       cccgggatgc agcgccagag atcgattttg tctttcttcc aaaaacccac ggcggcgact     60
692       acgaagggtt tggtttccgg cgatgctgct agcggcgggg gcggcagcgg aggaccacga     120
693       tttaatgtga aggaagggga tgctaaaggc gacgcttctg tacgttttgc tgtttcgaaa     180
694       tctgtcgatg aggttagagg aacggatact ccaccggaga aggttccgcg tcgtgtcctg     240
695       ccgtctggat ttaagccggc tgaatccgcc ggtgatgctt cgtccctgtt ctccaatatt     300
696       atgcataagt ttgtaaaagt cgatgatcga gattgttctg gagagaggag ccgagaagat     360
697       gttgttccgc tgaatgattc atctctatgt atgaaggcta atgatgttat tcctcaattt     420
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RAW SEQUENCE LISTING DATE: 10/21/2002
PATENT.APPLICATION: US/09/529,239B TIME: 18:20:24

Input Set : N:\Crf4\Refhold\I529239B.raw
Output Set: N:\CRF4\10212002\I529239B.raw

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     698        cgttccaata atggtaaaac tcaagaaaga aaccatgctt ttagtttcag tgggagagct     480
     699        gaacttagat cagtagaaga tataggagta gatggcgatg ttcctggtcc agaaacacca     540
     700        gggatgcgtc cacgtgcttc tcgcttgaag cgagttctgg aggatgaaat gacttttaag     600
     701        gaggataagg ttcctgtatt ggactctaac aaaaggctga aaatgctcca ggatccggtt     660
     702        tgtggagaga agaaagaagt aaacgaagga accaaatttg aatggcttga gtcttctcga     720
     703        atcagggatg ccaatagaag acgtcctgat gatccccttt acgatagaaa gaccttacac     780
     704        ataccacctg atgttttcaa gaaaatgtct gcatcacaaa agcaatattg gagtgttaag     840
     705        agtgaatata tggacattgt gcttttcttt aaagtgggga aattttatga gctgtatgag     900
     706        ctagatgcgg aattaggtca caaggagctt gactggaaga tgaccatgag tggtgtggga     960
     707        aaatgcagac aggttggtat ctctgaaagt gggatagatg aggcagtgca aaagctatta    1020
     708        gctcgtggat ataaagttgg acgaatcgag cagctagaaa catctgacca agcaaaagcc    1080
     709        agaggtgcta atactataat tccaaggaag ctagttcagg tattaactcc atcaacagca    1140
     710        agcgagggaa acatcgggcc tgatgccgtc catcttcttg ctataaaaga gatcaaaatg    1200
     711        gagctacaaa agtgttcaac tgtgtatgga tttgcttttg ttgactgtgc tgccttgagg    1260
     712        ttttgggttg ggtccatcag cgatgatgca tcatgtgctg ctcttggagc gttattgatg    1320
     713        caggtttctc caaaggaagt gttatatgac agtaaagggc tatcaagaga agcacaaaag    1380
     714        gctctaagga aatatacgtt gacagggtct acggcggtac agttggctcc agtaccacaa    1440
     715        gtaatggggg atacagatgc tgctggagtt agaaatataa tagaatctaa cggatacttt    1500
     716        aaaggttctt ctgaatcatg gaactgtgct gttgatggtc taaatgaatg tgatgttgcc    1560
     717        cttagtgctc ttggagagct aattaatcat ctgtctaggc taaagctaga agatgtactt    1620
     718        aagcatgggg atatttttcc ataccaagtt tacaggggtt gtctcagaat tgatggccag    1680
     719        acgatggtaa atcttgagat atttaacaat agctgtgatg gtggtccttc agggaccttg    1740
     720        tacaaatatc ttgataactg tgttagtcca actggtaagc gactcttaag gaattggatc    1800
     721        tgccatccac tcaaagatgt agaaagcatc aataaacggc ttgatgtagt tgaagaattc    1860
     722        acggcaaact cagaaagtat gcaaatcact ggccagtatc tccacaaact tccagactta    1920
     723        gaaagactgc tcggacgcat caagtctagc gttcgatcat cagcctctgt gttgcctgct    1980
     724        cttctgggga aaaaagtgct gaaacaacga gttaaagcat ttgggcaaat tgtgaaaggg    2040
     725        ttcagaagtg gaattgatct gttgttggct ctacagaagg aatcaaatat gatgagtttg    2100
     726        ctttataaac tctgtaaact tcctatatta gtaggaaaaa gcgggctaga gttatttctt    2160
     727        tctcaattcg aagcagccat agatagcg                                      2188
     729 <210> SEQ ID NO: 27
     730 <211> LENGTH: 1385
     731 <212> TYPE: DNA
     732 <213> ORGANISM: Arabidopsis thaliana ecotype Columbia
     733 <223> OTHER INFORMATION: Clone 62
E--> 734 <400> SEQUENCE: 27
     735        catcagcctc tgtgttgcct gctcttctgg ggaaaaaagt gctgaaacaa cgagttaaag      60
     736        catttgggca aattgtgaaa gggttcagaa gtggaattga tctgttgttg gctctacaga     120
     737        aggaatcaaa tatgatgagt ttgctttata aactctgtaa acttcctata ttagtaggaa     180
     738        aaagcgggct agagttattt ctttctcaat tcgaagcagc catagatagc gactttccaa     240
     739        attatcagaa ccaagatgtg acagatgaaa acgctgaaac tctcacaata cttatcgaac     300
     740        tttttatcga aagagcaact caatggtctg aggtcattca caccataagc tgcctagatg     360
     741        tcctgagatc ttttgcaatc gcagcaagtc tctctgctgg aagcatggcc aggcctgtta     420
     742        tttttcccga atcagaagct acagatcaga atcagaaaac aaaagggcca atacttaaaa     480
     743        tccaaggact atggcatcca tttgcagttg cagccgatgg tcaattgcct gttccgaatg     540
     744        atatactcct tggcgaggct agaagaagca gtggcagcat tcatcctcgg tcattgttac     600
     745        tgacgggacc aaacatgggc ggaaaatcaa ctcttcttcg tgcaacatgt ctggccgtta     660
     746        tctttgccca acttggctgc tacgtgccgt gtgagtcttg cgaaatctcc ctcgtggata     720
     747        ctatcttcac aaggcttggc gcatctgata gaatcatgac aggagagagt acctttttgg     780
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same

RAW SEQUENCE LISTING DATE: 10/21/2002
PATENT.APPLICATION: US/09/529,239B TIME: 18:20:24

Input Set : N:\Crf4\Refhold\I529239B.raw
Output Set: N:\CRF4\10212002\I529239B.raw

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748       tagaatgcac tgagacagcg tcagttcttc agaatgcaac tcaggattca ctagtaatcc     840
749       ttgacgaact gggcagagga actagtactt tcgatggata cgccattgca tactcggttt     900
750       ttcgtcacct ggtagagaaa gttcaatgtc ggatgctctt tgcaacacat taccaccctc     960
751       tcaccaagga attcgcgtct cacccacgtg tcacctcgaa acacatggct tgcgcattca     1020
752       aatcaagatc tgattatcaa ccacgtggtt gtgatcaaga cctagtgttc ttgtaccgtt     1080
753       taaccgaggg agcttgtcct gagagctacg gacttcaagt ggcactcatg gctggaatac     1140
754       caaaccaagt ggttgaaaca gcatcaggtg ctgctcaagc catgaagaga tcaattgggg     1200
755       aaaacttcaa gtcaagtgag ctaagatctg agttctcaag tctgcatgaa gactggctca     1260
756       agtcattggt gggtatttct cgagtcgccc acaacaatgc ccccattggc gaagatgact     1320
757       acgacacttt gttttgctta tggcatgaga tcaaatcctc ttactgtgtt cccaaataac     1380
758       ccggg                                                                1385
1005 <210> SEQ ID NO: 31
1006 <211> LENGTH: 1109
1007 <212> TYPE: PRT
1008 <213> ORGANISM: Arabidopsis thaliana ecotype Columbia
1009 <223> OTHER INFORMATION: Polypeptide MSH6
E--> 1010 <400> SEQUENCE: 31
1011       Met Gln Arg Gln Arg Ser Ile Leu Ser Phe Phe Gln Lys Pro Thr Ala
1012         1               5                  10                  15
1013       Ala Thr Thr Lys Gly Leu Val Ser Gly Asp Ala Ala Ser Gly Gly Gly
1014                    20                  25                  30
1015       Gly Ser Gly Gly Pro Arg Phe Asn Val Arg Glu Gly Asp Ala Lys Gly
1016               35                  40                  45
1017       Asp Ala Ser Val Arg Phe Ala Val Ser Lys Ser Val Asp Glu Val Arg
1018            50                  55                  60
1019       Gly Thr Asp Thr Pro Pro Glu Lys Val Pro Arg Arg Val Leu Pro Ser
1020        65                  70                  75                  80
1021       Gly Phe Lys Pro Ala Glu Ser Ala Gly Asp Ala Ser Ser Leu Phe Ser
1022                    85                  90                  95
1023       Asn Ile Met His Lys Phe Val Lys Val Asp Asp Arg Asp Cys Ser Gly
1024                100                 105                 110
1025       Glu Arg Ser Arg Glu Asp Val Val Pro Leu Asn Asp Ser Ser Leu Cys
1026               115                 120                 125
1027       Met Lys Ala Asn Asp Val Ile Pro Gln Phe Arg Ser Asn Asn Gly Lys
1028           130                 135                 140
1029       Thr Gln Glu Arg Asn His Ala Phe Ser Phe Ser Gly Arg Ala Glu Leu
1030       145                 150                 155                 160
1031       Arg Ser Val Glu Asp Ile Gly Val Asp Gly Asp Val Pro Gly Pro Glu
1032                    165                 170                 175
1033       Thr Pro Gly Met Arg Pro Arg Ala Ser Arg Leu Lys Arg Val Leu Glu
1034                180                 185                 190
1035       Asp Glu Met Thr Phe Lys Glu Asp Lys Val Pro Val Leu Asp Ser Asn
1036               195                 200                 205
1037       Lys Arg Leu Lys Met Leu Gln Asp Pro Val Cys Gly Glu Lys Lys Glu
1038           210                 215                 220
1039       Val Asn Glu Gly Thr Lys Phe Glu Trp Leu Glu Ser Ser Arg Ile Arg
1040       225                 230                 235                 240
1041       Asp Ala Asn Arg Arg Arg Pro Asp Asp Pro Leu Tyr Asp Arg Lys Thr
1042                    245                 250                 255
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Use of n and/or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to insure a corresponding explanation is presented in the <220> to <223> fields of each sequence using n or Xaa.

RAW SEQUENCE LISTING DATE: 10/21/2002
PATENT.APPLICATION: US/09/529,239B TIME: 18:20:24

Input Set : N:\Crf4\Refhold\I529239B.raw
Output Set: N:\CRF4\10212002\I529239B.raw

```
1043  Leu His Ile Pro Pro Asp Val Phe Lys Lys Met Ser Ala Ser Gln Lys
1044                  260                 265                 270
1045  Gln Tyr Trp Ser Val Lys Ser Glu Tyr Met Asp Ile Val Leu Phe Phe
1046              275                 280                 285
1047  Lys Val Gly Lys Phe Tyr Glu Leu Tyr Glu Leu Asp Ala Glu Leu Gly
1048      290                 295                 300
1049  His Lys Glu Leu Asp Trp Lys Met Thr Met Ser Gly Val Gly Lys Cys
1050  305                 310                 315                 320
1051  Arg Gln Val Gly Ile Ser Glu Ser Gly Ile Asp Glu Ala Val Gln Lys
1052                  325                 330                 335
1053  Leu Leu Ala Arg Gly Tyr Lys Val Gly Arg Ile Glu Gln Leu Glu Thr
1054                  340                 345                 350
1055  Ser Asp Gln Ala Lys Ala Arg Gly Ala Asn Thr Ile Ile Pro Arg Lys
1056              355                 360                 365
1057  Leu Val Gln Val Leu Thr Pro Ser Thr Ala Ser Glu Gly Asn Ile Gly
1058      370                 375                 380
1059  Pro Asp Ala Val His Leu Leu Ala Ile Lys Glu Ile Lys Met Glu Leu
1060  385                 390                 395                 400
1061  Gln Lys Cys Ser Thr Val Tyr Gly Phe Ala Phe Val Asp Cys Ala Ala
1062                  405                 410                 415
1063  Leu Arg Phe Trp Val Gly Ser Ile Ser Asp Asp Ala Ser Cys Ala Ala
1064                  420                 425                 430
1065  Leu Gly Ala Leu Leu Met Gln Val Ser Pro Lys Glu Val Leu Tyr Asp
1066              435                 440                 445
1067  Ser Lys Gly Leu Ser Arg Glu Ala Gln Lys Ala Leu Arg Lys Tyr Thr
1068      450                 455                 460
1069  Leu Thr Gly Ser Thr Ala Val Gln Leu Ala Pro Val Pro Gln Val Met
1070  465                 470                 475                 480
1071  Gly Asp Thr Asp Ala Ala Gly Val Arg Asn Ile Ile Glu Ser Asn Gly
1072                  485                 490                 495
1073  Tyr Phe Lys Gly Ser Ser Glu Ser Trp Asn Cys Ala Val Asp Gly Leu
1074                  500                 505                 510
1075  Asn Glu Cys Asp Val Ala Leu Ser Ala Leu Gly Glu Leu Ile Asn His
1076              515                 520                 525
1077  Leu Ser Arg Leu Lys Leu Glu Asp Val Leu Lys His Gly Asp Ile Phe
1078      530                 535                 540
1079  Pro Tyr Gln Val Tyr Arg Gly Cys Leu Arg Ile Asp Gly Gln Thr Met
1080  545                 550                 555                 560
1081  Val Asn Leu Glu Ile Phe Asn Asn Ser Cys Asp Gly Gly Pro Ser Gly
1082                  565                 570                 575
1083  Thr Leu Tyr Lys Tyr Leu Asp Asn Cys Val Ser Pro Thr Gly Lys Arg
1084                  580                 585                 590
1085  Leu Leu Arg Asn Trp Ile Cys His Pro Leu Lys Asp Val Glu Ser Ile
1086              595                 600                 605
1087  Asn Lys Arg Leu Asp Val Val Glu Glu Phe Thr Ala Asn Ser Glu Ser
1088      610                 615                 620
1089  Met Gln Ile Thr Gly Gln Tyr Leu His Lys Leu Pro Asp Leu Glu Arg
1090  625                 630                 635                 640
1091  Leu Leu Gly Arg Ile Lys Ser Ser Val Arg Ser Ser Ala Ser Val Leu
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RAW SEQUENCE LISTING DATE: 10/21/2002
PATENT.APPLICATION: US/09/529,239B TIME: 18:20:24

Input Set : N:\Crf4\Refhold\I529239B.raw
Output Set: N:\CRF4\10212002\I529239B.raw

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1093  Pro Ala Leu Leu Gly Lys Lys Val Leu Lys Gln Arg Val Lys Ala Phe
1094                660                 665                 670
1095  Gly Gln Ile Val Lys Gly Phe Arg Ser Gly Ile Asp Leu Leu Leu Ala
1096            675                 680                 685
1097  Leu Gln Lys Glu Ser Asn Met Met Ser Leu Leu Tyr Lys Leu Cys Lys
1098        690                 695                 700
1099  Leu Pro Ile Leu Val Gly Lys Ser Gly Leu Glu Leu Phe Leu Ser Gln
1100  705                 710                 715                 720
1101  Phe Glu Ala Ala Ile Asp Ser Asp Phe Pro Asn Tyr Gln Asn Gln Asp
1102                    725                 730                 735
1103  Val Thr Asp Glu Asn Ala Glu Thr Leu Thr Ile Leu Ile Glu Leu Phe
1104                740                 745                 750
1105  Ile Glu Arg Ala Thr Gln Trp Ser Glu Val Ile His Thr Ile Ser Cys
1106            755                 760                 765
1107  Leu Asp Val Leu Arg Ser Phe Ala Ile Ala Ala Ser Leu Ser Ala Gly
1108        770                 775                 780
1109  Ser Met Ala Arg Pro Val Ile Phe Pro Glu Ser Glu Ala Thr Asp Gln
1110  785                 790                 795                 800
1111  Asn Gln Lys Thr Lys Gly Pro Ile Leu Lys Ile Gln Gly Leu Trp His
1112                    805                 810                 815
1113  Pro Phe Ala Val Ala Ala Asp Gly Gln Leu Pro Val Pro Asn Asp Ile
1114                820                 825                 830
1115  Leu Leu Gly Glu Ala Arg Arg Ser Ser Gly Ser Ile His Pro Arg Ser
1116            835                 840                 845
1117  Leu Leu Leu Thr Gly Pro Asn Met Gly Gly Lys Ser Thr Leu Leu Arg
1118        850                 855                 860
1119  Ala Thr Cys Leu Ala Val Ile Phe Ala Gln Leu Gly Cys Tyr Val Pro
1120  865                 870                 875                 880
1121  Cys Glu Ser Cys Glu Ile Ser Leu Val Asp Thr Ile Phe Thr Arg Leu
1122                    885                 890                 895
1123  Gly Ala Ser Asp Arg Ile Met Thr Gly Glu Ser Thr Phe Leu Val Glu
1124                900                 905                 910
1125  Cys Thr Glu Thr Ala Ser Val Leu Gln Asn Ala Thr Gln Asp Ser Leu
1126            915                 920                 925
1127  Val Ile Leu Asp Glu Leu Gly Arg Gly Thr Ser Thr Phe Asp Gly Tyr
1128        930                 935                 940
1129  Ala Ile Ala Tyr Ser Val Phe Arg His Leu Val Glu Lys Val Gln Cys
1130  945                 950                 955                 960
1131  Arg Met Leu Phe Ala Thr His Tyr His Pro Leu Thr Lys Glu Phe Ala
1132                    965                 970                 975
1133  Ser His Pro Arg Val Thr Ser Lys His Met Ala Cys Ala Phe Lys Ser
1134                980                 985                 990
1135  Arg Ser Asp Tyr Gln Pro Arg Gly Cys Asp Gln Asp Leu Val Phe Leu
1136            995                1000                1005
1137  Tyr Arg Leu Thr Glu Gly Ala Cys Pro Glu Ser Tyr Gly Leu Gln Val
1138       1010                1015                1020
1139  Ala Leu Met Ala Gly Ile Pro Asn Gln Val Val Glu Thr Ala Ser Gly
1140  1025                1030                1035                1040
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RAW SEQUENCE LISTING DATE: 10/21/2002
PATENT.APPLICATION: US/09/529,239B TIME: 18:20:24

Input Set : N:\Crf4\Refhold\I529239B.raw
Output Set: N:\CRF4\10212002\I529239B.raw

```
1141       Ala Ala Gln Ala Met Lys Arg Ser Ile Gly Glu Asn Phe Lys Ser Ser
1142                       1045                1050                1055
1143       Glu Leu Arg Ser Glu Phe Ser Ser Leu His Glu Asp Trp Leu Lys Ser
1144                   1060                1065                1070
1145       Leu Val Gly Ile Ser Arg Val Ala His Asn Asn Ala Pro Ile Gly Glu
1146              1075                1080                1085
1147       Asp Asp Tyr Asp Thr Leu Phe Cys Leu Trp His Glu Ile Lys Ser Ser
1148          1090                1095                1100
1149       Tyr Cys Val Pro Lys
1150       1105
```

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 10/21/2002
PATENT APPLICATION: US/09/529,239B TIME: 18:20:25

Input Set : N:\Crf4\Refhold\I529239B.raw
Output Set: N:\CRF4\10212002\I529239B.raw

Invalid Line Length:
The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:1; Line(s) 30
Seq#:2; Line(s) 53
Seq#:3; Line(s) 68
Seq#:4; Line(s) 78
Seq#:5; Line(s) 88
Seq#:6; Line(s) 98
Seq#:7; Line(s) 108
Seq#:8; Line(s) 118
Seq#:9; Line(s) 128
Seq#:10; Line(s) 138
Seq#:11; Line(s) 148
Seq#:12; Line(s) 175,176,177,178
Seq#:13; Line(s) 186
Seq#:14; Line(s) 196
Seq#:15; Line(s) 223,224,225,226,227,228,229,230,231,232,233,234,235,236
Seq#:15; Line(s) 237,238,239,240,241
Seq#:16; Line(s) 249
Seq#:17; Line(s) 259
Seq#:18; Line(s) 271,479,480
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Seq#:22; Line(s) 650
Seq#:23; Line(s) 660
Seq#:24; Line(s) 670
Seq#:25; Line(s) 680
Seq#:26; Line(s) 707,708,709,710,711,712,713,714,715,716,717,718,719,720
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Seq#:27; Line(s) 751,752,753,754,755,756,757
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RAW SEQUENCE LISTING ERROR SUMMARY DATE: 10/21/2002
PATENT.APPLICATION: US/09/529,239B TIME: 18:20:25

Input Set : N:\Crf4\Refhold\I529239B.raw
Output Set: N:\CRF4\10212002\I529239B.raw

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Seq#:63; Line(s) 1465
Seq#:64; Line(s) 1475
Seq#:65; Line(s) 1485
Seq#:66; Line(s) 1495
Seq#:67; Line(s) 1505
Seq#:68; Line(s) 1515
Seq#:69; Line(s) 1525
Seq#:70; Line(s) 1535
Seq#:71; Line(s) 1545
Seq#:72; Line(s) 1555
Seq#:73; Line(s) 1565
Seq#:74; Line(s) 1575
Seq#:75; Line(s) 1585
Seq#:76; Line(s) 1595
Seq#:77; Line(s) 1605
Seq#:78; Line(s) 1615
Seq#:79; Line(s) 1625
Seq#:80; Line(s) 1635
Seq#:81; Line(s) 1645
Seq#:82; Line(s) 1655
Seq#:83; Line(s) 1665
Seq#:84; Line(s) 1675
Seq#:85; Line(s) 1685
Seq#:86; Line(s) 1695
Seq#:87; Line(s) 1705
Seq#:88; Line(s) 1715
Seq#:89; Line(s) 1725
Seq#:90; Line(s) 1735
Seq#:91; Line(s) 1745
Seq#:92; Line(s) 1755

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 10/21/2002
PATENT APPLICATION: US/09/529,239B TIME: 18:20:25

Input Set : N:\Crf4\Refhold\I529239B.raw
Output Set: N:\CRF4\10212002\I529239B.raw

Seq#:93; Line(s) 1765
Seq#:94; Line(s) 1775
Seq#:95; Line(s) 1785
Seq#:96; Line(s) 1795
Seq#:97; Line(s) 1805
Seq#:98; Line(s) 1833,1834,1835,1836,1837,1838,1839,1840,1841,1842,1843
Seq#:98; Line(s) 1844,1845,1846,1847,1848,1849,1850,1851,1852,1853,1854
Seq#:98; Line(s) 1855,1856,1857,1858,1859,1860,1861,1862,1863,1864,1865
Seq#:98; Line(s) 1866,1867,1868,1869,1870,1871,1872,1873,1874,1875,1876
Seq#:98; Line(s) 1877,1878,1879,1880,1881,1882,1883,1884,1885,1886,1887
Seq#:98; Line(s) 1888,1889,1890,1891,1892,1893,1894,1895,1896,1897,1898
Seq#:98; Line(s) 1899,1900,1901,1902,1903,1904,1905,1906,1907,1908,1909
Seq#:98; Line(s) 1910,1911,1912,1913,1914,1915,1916,1917,1918,1919,1920
Seq#:98; Line(s) 1921,1922,1923,1924,1925,1926,1927,1928,1929,1930,1931
Seq#:98; Line(s) 1932,1933,1934,1935,1936,1937,1938,1939,1940,1941,1942
Seq#:98; Line(s) 1943,1944,1945,1946,1947,1948,1949,1950

VERIFICATION SUMMARY DATE: 10/21/2002
PATENT APPLICATION: US/09/529,239B TIME: 18:20:25

Input Set : N:\Crf4\Refhold\I529239B.raw
Output Set: N:\CRF4\10212002\I529239B.raw

L:7 M:270 C: Current Application Number differs, Wrong Format
L:38 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:61 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:158 M:200 E: Mandatory Header Field missing, <220> Tag not found for SEQ ID#:12
L:206 M:200 E: Mandatory Header Field missing, <220> Tag not found for SEQ ID#:15
L:488 M:200 E: Mandatory Header Field missing, <220> Tag not found for SEQ ID#:19
L:690 M:200 E: Mandatory Header Field missing, <220> Tag not found for SEQ ID#:26
L:734 M:200 E: Mandatory Header Field missing, <220> Tag not found for SEQ ID#:27
L:1010 M:200 E: Mandatory Header Field missing, <220> Tag not found for SEQ ID#:31